

## Syllabus: Math 1A, Sec. 4 Spring 2017

Instructor: Dr. Bill Wilson

Office Hours: 11:30 – 12:30 Tuesday, Wednesday

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### Required Materials:

Text: Calculus: Early Transcendentals, (8th edition) by James Stewart/Ron Larsen.

Graphing calculator (such as TI 84)

**Course Description:** This is the first course of a three course series on calculus. The course focuses on the concepts of limits and derivatives of functions – what are they, how to compute them, and how to use them.

### Student Learning Outcome Statements (SLO):

- Analyze and synthesize the concepts of limits, continuity, and differentiation from a graphical, numerical, analytical and verbal approach, using correct notation and mathematical precision.
- Evaluate the behavior of graphs in the context of limits, continuity and differentiability.
- Recognize, diagnose, and decide on the appropriate method for solving applied real world problems in optimization, related rates and numerical approximation.

### Course Objectives

- A. Analyze and explore aspects of the differential calculus.
- B. Compute and interpret limits of functions using analytic and other methods, including L'Hospital's Rule.
- C. Apply the definition of continuity to analyze the behavior of functions.
- D. Use the power, quotient, product, and chain rules to differentiate functions, including implicit and parametric functions.
- E. Use first and second derivatives to characterize the direction and concavity of graphs of functions.
- F. Apply the derivative to situations involving rates of change.
- G. Solve problems about related rates by applying appropriate differentiation techniques.
- H. Apply the Intermediate Value Theorem when locating roots of functions.
- I. Interpret and apply the Mean Value Theorem for derivatives in relation to average and instantaneous rate of change.
- J. Formulate equations to model minimum/maximum problems and use derivatives to arrive at plausible solutions.
- K. Apply Newton's Method to find values of functions.
- L. Define the antiderivative and determine antiderivatives of simple functions.

**Homework:** Homework will be assigned most classes.

**Exams:** Three exams will be given plus the final exam. There will be no makeups. If an exam is missed because of a valid excuse, an equivalent of the final exam score will be used as the score for the missed exam.

**Quizzes:** Regular quizzes will be given. You may correct and resubmit two quizzes for a higher score.

**Final Exam:** A comprehensive final exam will be given.

**Accommodations:** Students requiring accommodations are welcome in this class. Please notify me immediately if you have special learning requirements. We need to make arrangements with DSS as soon as possible. Go to <https://www.deanza.edu/dss/> for more information.

**Grading:** 3 midterms @ 15% = 45%  
homework and class work: 10%  
quizzes: 15%  
final exam: 30%

**Scale:** A: 93+      A-: 90+  
B+: 87+      B: 83+      B-: 80+  
C+: 77+      C: 70+  
D: 60+  
F: < 60

**ESL:** If English is a second language, a print English translation dictionary is allowed for exams/quizzes.

**Expectations of Students:**

1. **Academic dishonesty will not be tolerated.** If a student is found cheating on an exam or quiz, he or she will receive a 0 for the item. Repeated instances of cheating may lead to failing the course and further action.
2. **Showing your work.** You need to show your work on homework and exams to receive full credit.
3. **Respect you fellow students.** Silence cell phones and tablets in class.